

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Thomas R. Cech et al.

Application No.: To Be Assigned

Filed: Herewith

For: HUMAN TELOMERASE
CATALYTIC SUBUNIT: DIAGNOSTIC
AND THERAPEUTIC METHODS

Examiner: To Be Assigned

Art Unit: To Be Assigned

INFORMATION DISCLOSURE
STATEMENT UNDER 37 CFR §1.97 and
§1.98



Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. In accordance with 37 CFR §1.98(d), copies of the references can be found in Application No. 08/912,951, filed August 14, 1997 (Attorney Docket No. 015389-002600US). If the examiner would like additional copies of any of these cited references, applicants will happily provide them.

It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom. As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicant believes that no fee is required for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the

Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,



Hugh Wang
Reg. No. 47,163

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PTO/SB/08A (08-00)

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| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary) | | | | Application Number | To Be Assigned |
| | | | | Filing Date | Herewith |
| | | | | First Named Inventor | Cech, Thomas J. |
| | | | | Group Art Unit | To Be Assigned |
| | | | | Examiner Name | To Be Assigned |
| Sheet | 1 | of | 10 | Attorney Docket Number | 015389-002630US |

11046 U.S. PTO
10/04/02
01/11/02

| U.S. PATENT DOCUMENTS | | | | | | |
|-----------------------|-----------------------|----------------------|-----------------------------------|---|--|---|
| Examiner Initials * | Cite No. ¹ | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number | Kind Code ² (if known) | | | |
| | A | 08/751,189 | | Harrington, et al. | 11/15/96 | |
| | B | 60/038,750 | | Counter, et al. | 02/20/97 | |
| | C | 3,817,837 | | Tanenholtz et al. | 06-18-74 | |
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| | O | 5,583,016 | | Villeponteau et al. | 12-10-96 | |
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| | S | 6,258,535 | B1 | Villeponteau et al. | 07/10/01 | |
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| FOREIGN PATENT DOCUMENTS | | | | | | | | |
|--------------------------|-----------------------|-------------------------|---------------------|--------------------------------------|---|---|---|----------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | T ⁶ |
| | | Office ³ | Number ⁴ | Kind Code ⁵ (if known) | | | | |
| | V | JP | 09154575-A | | | 06-17-97 | | |
| | W | PCT | WO 84/03564 | | | 09-13-84 | | |
| | X | PCT | WO 95/13382 | | | 05-18-95 | | |
| | Y | PCT | WO 96/01835 | | | 01-25-96 | | |
| | Z | PCT | WO 96/12811 | | | 05-02-96 | | |
| | AA | PCT | WO 96/19580 | | | 06-27-96 | | |

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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| | | | | Filing Date | Herewith |
| | | | | First Named Inventor | Cech, Thomas J. |
| | | | | Group Art Unit | To Be Assigned |
| | | | | Examiner Name | To Be Assigned |
| Sheet | 2 | of | 10 | Attorney Docket Number | 015389-002630US |

| FOREIGN PATENT DOCUMENTS | | | | | | | | |
|--------------------------|--------------------------|-------------------------|---------------------|--------------------------------------|---|--|--|----------------|
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| | | Office ³ | Number ⁴ | Kind Code ⁵ (if known) | | | | |
| | AB | PCT | WO 96/40868 | | | 12-19-96 | | |
| | AC | PCT | WO 98/01542 | | | 01-15-98 | | |
| | AD | PCT | WO 98/01543 | | | 01-15-98 | | |
| | AE | PCT | WO 98/07838 | | | 03-05-98 | | |
| | AF | PCT | WO 98/08938 | | | 02-26-98 | | |
| | AG | PCT | WO 98/21343 | | | 05-22-98 | | |
| | AH | PCT | WO 98/37181 | | | 08-27-98 | | |
| | AI | PCT | WO 98/45450 | | | 10-15-98 | | |
| | AJ | PCT | WO98/59040 | | | 12/30/98 | | |
| | AK | PCT | WO99/01560 | | | 01/14/99 | | |

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| | | Filing Date | Herewith |
| | | First Named Inventor | Cech, Thomas J. |
| | | Group Art Unit | To Be Assigned |
| | | Examiner Name | To Be Assigned |
| | | Attorney Docket Number | 015389-002630US |
| Sheet | 3 | of | 10 |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS | | | |
|--|--------------------------|---|----------------|
| Examiner Initials * | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| | AL | 1994 Genome Issue of <i>Science</i> (265:1981f) | |
| | AM | Anderson and Young, "Quantitative Filter Hybridization" in <i>Nucleic Acid Hybridization</i> pp73-111 (1985) | |
| | AN | Ausubel <i>et al.</i> , <i>Current Protocols in Molecular Biology</i> , John Wiley & Sons, New York NY (1989) | |
| | AO | Autexier <i>et al.</i> , "Reconstitution of human telomerase activity and identification of a minimal functional region of the human telomerase RNA," (1996) <i>EMBO J.</i> 15:5928 | |
| | AP | Auxier and Greider, "Functional reconstitution of wild-type and mutant <i>Tetrahymena</i> telomerase," (1994) <i>Genes Develop.</i> 8:563 | |
| | AQ | Berger and Kimmel, <i>Guide to Molecular Cloning Techniques</i> , Meth. Enzymol., vol. 152, Academic Press, San Diego CA (1987) | |
| | AR | Biessman <i>et al.</i> , "Addition of Telomere-Associated HeT DNA Sequences "Heals" Broken Chromosome Ends in <i>Drosophila</i> ," (1990) <i>Cell</i> , 61:663 | |
| | AS | Bitter <i>et al.</i> , "Expression and secretion vectors for yeast," <i>Meth Enzymol.</i> , (1987) 153:516 | |
| | AT | Blackburn and Chiou, "Non-nucleosomal packaging of a tandemly repeated DNA sequence at termini of extrachromosomal DNA coding for rRNA in <i>Tetrahymena</i> ," (1981) <i>Proc. Natl. Acad. Sci.</i> , 78:2263 | |
| | AU | Blackburn and Gall, "A tandemly repeated sequence at the termini of the extrachromosomal ribosomal RNA genes in <i>Tetrahymena</i> ," (1978) <i>J. Mol. Biol.</i> , 120:33 | |
| | AV | Blackburn, "Telomerases," (1992) <i>Ann. Rev. Biochem.</i> , 61:113 | |
| | AW | Bodnar <i>et al.</i> , "Extension of Life-Span by Introduction of Telomerase into Normal Human Cells," (1998) <i>Science</i> , 279:349 | |
| | AX | Bradford, "A Rapid and Sensitive method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding," (1976) <i>Anal. Biochem.</i> , 72:248 | |
| | AY | Braunstein <i>et al.</i> , "Transcriptional silencing in yeast is associated with reduced nucleosome acetylation," (1993) <i>Genes Develop.</i> , 7:592 | |

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| | | First Named Inventor | Cech, Thomas J. |
| | | Group Art Unit | To Be Assigned |
| | | Examiner Name | To Be Assigned |
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| | | Attorney Docket Number | 015389-002630US |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS | | | |
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| Examiner Initials * | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| | AZ | Calvio <i>et al.</i> , "Identification of hnRNP P2 as TLS/FUS using electrospray mass spectrometry," (1995) <i>RNA</i> , 1:724 | |
| | BA | Caruthers <i>et al.</i> , "New chemical methods for synthesizing polynucleotides," (1980) <i>Nucleic Acids Res. Symp. Ser.</i> , 215-223 | |
| | BB | Chan and Tye, "Organization of DNA sequences and replication origins at yeast telomeres," (1983) <i>Cell</i> , 33:563 | |
| | BC | Colbere-Garapin <i>et al.</i> , "A new dominant hybrid selective marker for higher eukaryotic cells," (1981) <i>J. Mol. Biol.</i> , 150:1 | |
| | BD | Cole <i>et al.</i> , "The EBV-hybridoma technique and its application to human lung cancer," <i>Monoclonal Antibodies and Cancer Therapy</i> , Alan R. Liss Inc., New York NY 77-96 (1985) | |
| | BE | Collins <i>et al.</i> , "Purification of Tetrahymena telomerase and cloning of genes encoding the two protein components of the enzyme," (1995) <i>Cell</i> , 81:677 | |
| | BF | Conrad <i>et al.</i> , "RAP1 protein interacts with yeast telomers in vivo: Overproduction alters telomere structure and decreases chromosome stability," (1990) <i>Cell</i> , 63:739 | |
| | BG | Coombs, <i>Dictionary of Biotechnology</i> , Stockton Press, New York NY (1994) | |
| | BH | Cote <i>et al.</i> , "Generation of human monoclonal antibodies reactive with cellular antigens," (1983) <i>Proc. Natl. Acad. Sci.</i> , 80:2026 | |
| | BI | Counter <i>et al.</i> , "The catalytic subunit of yeast telomerase," (1997) <i>Proc. Natl. Acad. Sci.</i> , 94:9202 | |
| | BJ | Counter <i>et al.</i> , (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:2900 | |
| | BK | Creighton, <i>Proteins, Structures and Molecular Principles</i> , WH Freeman and Co, New York, NY (1983) | |
| | BL | Dieffenbach and Dveksler, <i>PCR Primer, a Laboratory Manual</i> , Cold Spring Harbor Press, Plainview NY (1995) | |

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| First Named Inventor | | Cech, Thomas J. | | | |
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| Attorney Docket Number | | 015389-002630US | | | |

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| Sheet | 5 | of | 10 |
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| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS | | | |
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| Examiner Initials * | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| | BM | Duplaa <i>et al.</i> , "Quantitative analysis of polymerase chain reaction products using biotinylated dUTP incorporation," (1993) <i>Anal. Biochem.</i> , 212:229 | |
| | BN | Fang <i>et al.</i> , "Oxytricha telomere-binding protein: separable DNA-binding and dimerization domains of the α -subunit," <i>Genes Develop.</i> 7:870 (1993) and Gray <i>et al.</i> , (1991) <i>Cell</i> 67:807 | |
| | BO | Feng <i>et al.</i> , "The RNA Component of Human Telomerase," (1995) <i>Science</i> , 269:1236 | |
| | BP | GenBank Accession No. AA281296 | |
| | BQ | Genbank accession no. AA299878 | |
| | BR | Genbank accession no. AA311750 | |
| | BS | Gilley <i>et al.</i> , "Altering specific telomerase RNA template residues affects active site function," (1995) <i>Genes Develop.</i> , 9:2214 | |
| | BT | Gottschling and Cech, "Chromatin Structure of the Molecular Ends of Oxytricha Mononuclear DNA: Phased Nucleosomes and a Telomeric Complex," (1984) <i>Cell</i> , 38:501 | |
| | BU | Gottschling and Zakian, "Telomere proteins: specific recognition and protection of the natural termini of Oxytricha macronuclear DNA," (1986) <i>Cell</i> 47:195 | |
| | BV | Grant <i>et al.</i> , <i>Meth Enzymol.</i> , (1987) 153:516-544 | |
| | BW | Greenwood <i>et al.</i> , "Phylogenetic relationships within the class oligohymenophorea, phylum ciliophora, inferred from the complete small subunit rRNA gene sequences of <i>Colpidium campylum</i> , <i>Glaucoma chattoni</i> , and <i>Opisthonecta henneguyi</i> ," (1991) <i>J. Mol. Evol.</i> , 3:163 | |
| | BX | Greider and Blackburn, "A telomeric sequence in the RNA of Tetrahymena telomerase required for telomere repeat synthesis," (1989) <i>Nature</i> , 337:331 | |
| | BY | Greider and Blackburn, "Identification of a specific telomere terminal transferase activity in Tetrahymena extracts," (1985) <i>Cell</i> , 43:405 | |

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| Substitute for form 1449B/PTO <h2 style="text-align: center;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</h2> <p style="text-align: center;">(use as many sheets as necessary)</p> | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">Complete if Known</th> </tr> <tr> <td style="width: 50%;">Application Number</td> <td>To Be Assigned</td> </tr> <tr> <td>Filing Date</td> <td>Herewith</td> </tr> <tr> <td>First Named Inventor</td> <td>Cech, Thomas J.</td> </tr> <tr> <td>Group Art Unit</td> <td>To Be Assigned</td> </tr> <tr> <td>Examiner Name</td> <td>To Be Assigned</td> </tr> <tr> <td>Attorney Docket Number</td> <td>015389-002630US</td> </tr> </table> | | Complete if Known | | Application Number | To Be Assigned | Filing Date | Herewith | First Named Inventor | Cech, Thomas J. | Group Art Unit | To Be Assigned | Examiner Name | To Be Assigned | Attorney Docket Number | 015389-002630US |
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| Examiner Name | To Be Assigned | | | | | | | | | | | | | | | | |
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| Sheet | 6 | of | 10 | | | | | | | | | | | | | | |

| OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS | | | |
|--|--------------------------|---|----------------|
| Examiner Initials * | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| | BZ | Greider, "Telomerase is processive," (1991) <i>Mol. Cell. Biol.</i> , 11:4572 | |
| | CA | Greider, "Telomere Length Regulation," (1996) <i>Ann. Rev. Biochem.</i> , 65:337 | |
| | CB | Hampton <i>et al.</i> , <i>Serological Methods a Laboratory Manual</i> , APS Press, St Paul MN (1990) | |
| | CC | Harrington <i>et al.</i> , "A Mammalian Telomerase-Associated Protein," (1997) <i>Science</i> , 275:973 | |
| | CD | Harrington <i>et al.</i> , "Human telomerase contains evolutionarily conserved catalytic and structural subunits," (1997) <i>Genes Dev.</i> , 11:3109 | |
| | CE | Hartman and Mulligan, "Two dominant-acting selectable markers for gene transfer studies in mammalian cells," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:8047 | |
| | CF | Henderson and Blackburn, "An overhanging 3' terminus is a conserved feature of telomeres," (1989) <i>Mol Cell. Biol.</i> , 9:345 | |
| | CG | Horn <i>et al.</i> , "Synthesis of oligonucleotides on cellulose. Part II: design and synthetic strategy to the synthesis of 22 oligodeoxynucleotides coding for gastric inhibitory polypeptide (GIP)," (1980) <i>Nucleic Acids Res. Symp. Ser.</i> , 225-232 | |
| | CH | Hudson <i>et al.</i> , "An STS-based map of the human genome," (1995) <i>Science</i> , 270:1945 | |
| | CI | Huse <i>et al.</i> , "Generation of a large combinatorial library of the immunoglobulin repertoire in phage lambda," (1989) <i>Science</i> , 246:1275 | |
| | CJ | Johnson <i>et al.</i> , (1991) <i>Mol. Cell Biol.</i> 11:1 | |
| | CK | Kilian <i>et al.</i> , "Isolation of a candidate human telomerase catalytic subunit gene, which reveals complex splicing patterns in different cell types," (1997) <i>Hum. Mol. Genet.</i> , 6:2011 | |
| | CL | Kipling and Cooke, "Hypervariable ultra-long telomeres in mice," (1990) <i>Nature</i> 347:400 | |
| | CM | Klobutcher <i>et al.</i> , "All gene-sized DNA molecules in four species of hypotrichs have the same terminal sequence and an unusual 3' terminus," (1981) <i>Proc. Natl. Acad. Sci.</i> , 78:3015 | |

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| | | Filing Date | Herewith | | |
| | | First Named Inventor | Cech, Thomas J. | | |
| | | Group Art Unit | To Be Assigned | | |
| | | Examiner Name | To Be Assigned | | |
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| | CN | Koehler and Milstein, "Continuous cultures of fused cells secreting antibody of predefined specificity," (1975) <i>Nature</i> 256:495 | |
| | CO | Kosbor <i>et al.</i> , "The production of monoclonal antibodies from human lymphocytes," (1983) <i>Immunol. Today</i> 4:72 | |
| | CP | Lamond and Sproat, (1994) "Isolation and Characterization of Ribonucleoprotein Complexes," pp103-140 | |
| | CQ | Lamond <i>et al.</i> , "Probing the structure and function of U2 snRNP with antisense oligonucleotides made of 2'-OMe RNA," (1989) <i>Cell</i> , 58:383 | |
| | CR | Lendvay <i>et al.</i> , "Senescence mutants of <i>Saccharomyces cerevisiae</i> with a defect in telomere replication identify three additional EST genes," (1996) <i>Genetics</i> , 144 | |
| | CS | Lingner <i>et al.</i> , "Purification of telomerase from <i>Euplotes aedeolatus</i> : requirement of a primer 3' overhang," (1996) <i>Proc. Natl. Acad. Sci.</i> , 93:10712 | |
| | CT | Lingner <i>et al.</i> , "Reverse transcriptase motifs in the catalytic subunit of telomerase," (1997) <i>Science</i> , 276:561 | |
| | CU | Lingner <i>et al.</i> , "Telomerase RNAs of different ciliates have a common secondary structure and a permuted template," (1994) <i>Genes Develop.</i> , 8:1984 | |
| | CV | Lingner <i>et al.</i> , "Telomerase and DNA End Replication: No Longer a Lagging Strand Problem?," (1995) <i>Science</i> 269:1533 | |
| | CW | Lowy <i>et al.</i> , "Isolation of transforming DNA: Cloning the hamster apt gene," (1980) <i>Cell</i> , 22:817 | |
| | CX | Lustig and Petes, Identification of yeast mutants with altered telomere structure," (1986) <i>Proc. Natl. Acad. Sci.</i> , 83:1398 | |
| | CY | Maddox <i>et al.</i> , "Elevated serum levels in human pregnancy of a molecule immunochemically similar to eosinophil granule major basic protein," (1983) <i>J. Exp. Med.</i> , 158:1211 | |
| | CZ | Makarov <i>et al.</i> , "Nucleosomal Organization of Telomere-Specific Chromatin in Rat," (1993) <i>Cell</i> , 73:775 | |
| | DA | McEachern and Blackburn, "runaway telomere elongation caused by telomerase RNA gene mutation," (1995) <i>Nature</i> , 376:403 | |

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| Examiner Name | To Be Assigned |
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|---------------------|-----------------------|---|----------------|
| | DB | Melby <i>et al.</i> , "Quantitative measurement of human cytokine gene expression by polymerase chain reaction," (1993) <i>J. Immunol. Meth.</i> , 159:235 | |
| | DC | Merrifield, "Solid phase peptide synthesis. I. The synthesis of a tetrapeptide," (1963) <i>J. Am. Chem. Soc.</i> , 85:2149 | |
| | DD | Meyerson <i>et al.</i> , "hEST2, the Putative Human Telomerase Catalytic Subunit Gene, Is Up-Regulated in Tumor Cells and during Immortalization," (1997) <i>Cell</i> , 90:785 | |
| | DE | Murray, <i>In McGraw Hill Yearbook of Science and Technology</i> , (1992) McGraw Hill, New York NY, pp 191-196 | |
| | DF | Nakamura <i>et al.</i> , "Telomerase Catalytic Subunit Homologs from Fission Yeast and Human," (1997) <i>Science</i> , 277:955 | |
| | DG | Nakayama <i>et al.</i> , "TLP1: A Gene Encoding a Protein Component of Mammalian Telomerase Is a Novel Member of WD Repeats Family," (1997) <i>Cell</i> , 88:875 | |
| | DH | Nielsen <i>et al.</i> , (1993) "Peptide nucleic acids (PNAs): Potential antisense and anti-gene agents," <i>Anticancer Drug Des.</i> , 8:53 | |
| | DI | Oka <i>et al.</i> , "Inverted terminal repeat sequence in the macronuclear DNA of <i>Stylonychia pustulata</i> ," (1980) <i>Gene</i> , 10:301 | |
| | DJ | Olovnikov, "A theory of marginotomy: The incomplete copying of template margin in enzymic synthesis of polynucleotides and biological significance of the phenomenon," (1973) <i>J. Theor. Biol.</i> , 41:181 | |
| | DK | Orlandi <i>et al.</i> , "Cloning immunoglobulin variable domains for expression by the polymerase chain reaction," (1989) <i>Proc. Natl. Acad. Sci.</i> , 86:3833 | |
| | DL | Prescott, "The DNA of ciliated protozoa," (1994) <i>Microbiol. Rev.</i> , 58:233 | |
| | DM | Price, (1993) <i>Blood Rev.</i> , 7:127 | |
| | DN | Rhodes <i>et al.</i> , "Transformation of maize by electroporation of embryos," (1995) <i>Meth. Mol. Biol.</i> , 55:121 | |
| | DO | Roberge <i>et al.</i> , "A strategy for a convergent synthesis of N-linked glycopeptides on a solid support," (1995) <i>Science</i> , 269:202 | |

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| First Named Inventor | | Cech, Thomas J. | | | |
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| | DP | Romero and Blackburn, "A conserved secondary structure for telomerase RNA, " (1991) <i>Cell</i> , 67:343 | |
| | DQ | Sambrook <i>et al.</i> , Molecular Cloning, A Laboratory Manual, Cold Spring Harbor Press, Plainview NY (1989) | |
| | DR | Sandell <i>et al.</i> , "Transcription of yeast telomere alleviates telomere position effect without affecting chromosome stability," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12061 | |
| | DS | Sanger <i>et al.</i> , "DNA sequencing with chain-terminating inhibitors," (1977) <i>Proc. Natl. Acad. Sci.</i> , 74:5463 | |
| | DT | Scharf <i>et al.</i> , "Heat stress promoters and transcription factors," (1994) <i>Result Probl. Cell Differ.</i> 20:125 | |
| | DU | Shampay and Blackburn, "Generation of telomere-length heterogeneity in <i>Saccharomyces cerevisiae</i> ," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:534 | |
| | DV | Sheen and Levis, "Transposition of the LINE-like retrotransposon TART to <i>Drosophila</i> chromosome termini," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12510 | |
| | DW | Singer and Gottschling, "TLC1: Template RNA Component of <i>Saccharomyces cerevisiae</i> Telomerase," (1994) <i>Science</i> 266:404 | |
| | DX | Starling <i>et al.</i> , "Extensive telomere repeat arrays in mouse are hypervariable," (1990) <i>Nucleic Acids Res.</i> , 18:6881 | |
| | DY | Swanton <i>et al.</i> , "Arrangement of Coding and Non-coding Sequences in the DNA Molecules Coding for rRNAs in <i>Oxytricha</i> sp.," (1980) <i>Chromosoma</i> 77:203 | |
| | DZ | Tommerup <i>et al.</i> , "Unusual chromatin in human telomeres," (1994) <i>Mol. Cell. Biol.</i> , 14:5777 | |
| | EA | Trask, "Fluorescence in situ hybridization: application in cytogenetics and gene mapping," (1991) <i>Trends Genet.</i> , 7:149 | |
| | EB | Verma <i>et al.</i> , "Human Chromosomes: A Manual of Basic Techniques," Pergamon Press, New York NY (1988) | |
| | EC | Watson, "Origin of concatemeric T7 DNA, " (1972) <i>Nature New Biol.</i> , 239:197 | |

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|---------------------|-----------------------|---|----------------|
| | ED | Weinrich <i>et al.</i> , "Reconstitution of human telomerase with the template RNA component hTR and the catalytic protein subunit hTERT," (1997) <i>Nat. Genet.</i> , 17(4):498 | |
| | EE | Wellinger <i>et al.</i> , "Origin activation and formation of single-strand TG ₁₋₃ tails occur sequentially in late S phase on a Yeast linear plasmid," (1993) <i>Mol. Cell. Biol.</i> , 13:4057 | |
| | EF | Wellinger <i>et al.</i> , "Saccharomyces Telomeres Acquire Single-Strand TG ₁₋₃ Tails Late in S Phase," (1993) <i>Cell</i> 72:51 | |
| | EG | Whitehead Institute/MIT Center for Genome Research, Genetic Map of the Mouse, Database Release 10, April 28, 1995 | |
| | EH | Wigler <i>et al.</i> , "Transfer of purified herpes virus thymidine kinase gene to cultured mouse cells," (1977) <i>Cell</i> , 11:223 | |
| | EI | Wigler <i>et al.</i> , "Transformation of mammalian cells with an amplifiable dominant-acting gene," (1980) <i>Proc. Natl. Acad. Sci.</i> , 77:3567 | |
| | EJ | Winter and Milstein, "Man-made antibodies," (1991) <i>Nature</i> , 349:293 | |
| | EK | Wright <i>et al.</i> , "Saccharomyces telomeres assume a non-nucleosomal chromatin structure," (1992) <i>Genes Develop.</i> , 6:197 | |
| | EL | Yu <i>et al.</i> , "In vivo alteration of telomere sequences and senescence caused by mutated Tetrahymena telomerase RNAs," (1990) <i>Nature</i> , 344:126 | |
| | EM | Zahler and Prescott, "Telomere terminal transferase activity in the hypotrichous ciliate <i>Oxytricha nova</i> and a model for replication of the ends of linear DNA molecules," (1988) <i>Nucleic Acids Res.</i> , 16:6953 | |
| | EN | Zakian, Telomeres: Beginning to Understand the End," (1995) <i>Science</i> 270:1601 | |
| | EO | Zaug <i>et al.</i> , "Catalysis of RNA Cleavage by a Ribozyme Derived from the Group I Intron of Anabaena Pre-tRNA ^{Leu} ," | |

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